

10/541513

JG20 Rec'd T/PTO 08 JUL 2005

Docket No.: 12810-00106-US  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Sabine Steiger et al.

Application No.: Not Yet Assigned

Confirmation No.: N/A

Filed: Concurrently Herewith

Art Unit: N/A

For: METHOD FOR PRODUCING  
KETOCAROTENOIDS BY CULTIVATING  
GENETICALLY MODIFIED ORGANISMS

Examiner: Not Yet Assigned

**INFORMATION DISCLOSURE STATEMENT (IDS)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement accompanies the new patent application submitted herewith.

Of the documents listed on the attached SB/08 are the documents cited in an International Search Report during the prosecution of international application no. PCT/EP2003/014876, which corresponds to the above referenced application. In accordance with 37 CFR 1.97(b)(2), Applicants hereby submit these documents for the Examiner's consideration. Other documents listed on the attached SB/08 are cited in the specification of the above referenced application. A copy of the International Search Report and the International Preliminary Examination Report are enclosed with this application. A copy of each reference on the PTO/SB/08 is attached.

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This statement is not to be interpreted as a representation that the cited documents are material, that a search has been conducted, or that no other relevant information exists. Nor shall the citation of any document herein be construed *per se* as a representation that such document is prior art. Moreover, Applicants understand the Examiner will make an independent evaluation of the cited documents.

Applicants believe no fee is due with this paper. However, if a fee is due, the Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 03-2775, under Order No. 12810-00106-US from which the undersigned is authorized to draw.

Respectfully submitted,

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PTO/SB/08a/b (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				Application Number	Not Yet Assigned
				Filing Date	Concurrently Herewith
				First Named Inventor	Sabine Steiger
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	1	of	2	Attorney Docket Number	12810-00106-US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)					
	BA	EP-0 735 137-A1		10-02-1996	Kirin Beer Kabushiki Kaisha, et al.		
	BB	WO-99/07867		02-18-1999	Calgene LLC		
	BC	WO-99/61652		12-02-1999	University of Maryland		
	BD	WO-03/012056 A2		02-13-2003	E.I. duPont de Nemours and Company		
	BE	WO-03/080849 A2		10-02-2003	Ball Horticultural Company		
	BF	WO-2004/018693 A2		03-04-2004	Sungene GmbH & Co. KGaA		See Abstract
	BG	WO-2004/018694 A2		03-04-2004	Sungene GmbH & Co. KGaA		See Abstract
	BH	DE-102 38 978 A1		03-04-2004	Sungene GmbH & Co. KGaA		See Attached & Abstract of WO-2004/018693

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NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	CA	Meeks, J. C. et al., "An Overview Of The Genome Of <i>Nostoc punctiforme</i> , A Multicellular, Symbiotic Cyanobacterium", <i>Photosynthesis Research</i> 70 (2001), pp. 85-106.	
	CB	Kaneko, T. et al., "Complete Genomic Sequence Of The Filamentous Nitrogen-fixing Cyanobacterium <i>Anabaena</i> sp. Strain PCC 7120", <i>DNA Research</i> 8 (2001), pp. 205-213.	
	CC	Moffitt, M. et al., "Evolutionary Affiliations Within The Superfamily Of Ketosynthases Reflect Complex Pathway Associations", <i>Journal of Molecular Evolution</i> 56 (2003), pp. 446-457.	
	CD	Misawa, N. et al., "Metabolic Engineering For The Production Of Carotenoids In Non-Carotenogenic Bacteria And Yeasts", <i>Journal of Biotechnology</i> 59 (1998), pp. 169-181.	
	CE	Lee, P. et al., "Metabolic Engineering Towards Biotechnological Production Of Carotenoids In Microorganisms", <i>Applied Microbiology and Biotechnology</i> 60 (2002), pp. 1-11.	
	CF	Sieiro, C. et al., "Genetic Basis Of Microbial Carotenogenesis", <i>International Microbiology</i> 6 (2003), pp. 11-16.	
	CG	Misawa, N. et al., "Structure And Functional Analysis Of A Marine Bacterial Carotenoid Biosynthesis Gene Cluster And Astaxanthin Biosynthetic Pathway Proposed At The Gene Level", <i>Journal of Bacteriology</i> 177 (1995), pp. 6575-6584.	

Examiner Signature		Date Considered	
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Substitute for form 1449A/B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				<b>Complete If Known</b>	
				Application Number <b>10/541513</b> Filing Date <b>Not Yet Assigned</b> First Named Inventor <b>Concurrently Herewith</b> Art Unit <b>Sabine Steiger</b> Examiner Name <b>N/A</b> Attorney Docket Number <b>Not Yet Assigned</b> <b>12810-00106-US</b>	
Sheet	2	of	2		

CH	Lotan, T. et al., "Cloning And Expression In <i>Escherichia coli</i> of The Gene Encoding $\beta$ -C-4-oxygenase, That Converts $\beta$ -carotene To The Ketocarotenoid Canthaxanthin in <i>Haematococcus pluvialis</i> ", FEBS Letters 364 (1995), pp. 125-128.	
CI	Breitenbach, J. et al., " Expression In <i>Escherichia coli</i> and Properties Of The Carotene Ketolase From <i>Haematococcus pluvialis</i> ", FEMS Microbiology Letters 140 (1996), pp. 241-246.	
CJ	Kajiwar, S. et al., "Isolation And Functional Identification Of A Novel cDNA For Astaxanthin Biosynthesis From <i>Haematococcus pluvialis</i> , And Astaxanthin Synthesis In <i>Escherichia coli</i> ", Plant Molecular Biology 29 (1995), pp. 343-352.	
CK	Harker, M. et al., "Biosynthesis Of Ketocarotenoids In Transgenic Cyanobacteria Expressing The Algal Gene for $\beta$ -C-4-oxygenase, <i>crtO</i> ", FEBS Letters 404 (1997), pp. 129-134.	
CL	Albrecht, M. et al., "Expression Of A Ketolase Gene Mediates The Synthesis Of Canthaxanthin In <i>Synechococcus</i> Leading To Tolerance Against Photoinhibition, Pigment Degradation And UV-B Sensitivity Of Photosynthesis", Photochemistry and Photobiology 73(5) (2001), pp. 551-555.	
CM	Fraser, P. et al., "Enzymic Confirmation Of Reactions Involved In Routes To Astaxanthin Formation, Elucidated Using A Direct Substrate <i>In Vitro</i> Assay", Eur. J. Biochem. 252 (1998), pp. 229-236.	
CN	Fernandez-Gonzalez, B. et al., "A New Type Of Asymmetrically Acting $\beta$ -Carotene Ketolase Is Required For The Synthesis Of Echinenone In The Cyanobacterium <i>Synechocystis</i> sp. PCC 6803", The Journal of Biological Chemistry 272, No. 15 (1997), pp. 9728-9733.	
CO	Mann, V. et al., "Metabolic Engineering Of Astaxanthin Production In Tobacco Flowers", Nature Biotechnology 18 (2000), 888-892.	
CP	Kaneko, T. et al., "Complete Genomic Sequence Of The Filamentous Nitrogen-fixing Cyanobacterium <i>Anabaena</i> sp. Strain PCC 7120", Database EMBL 'Online, Accession No: Q8YSA0.	
CQ	Moffitt, M.C. et al., "Evolutionary Affiliations Within The Superfamily Of Ketosynthases Reflect Complex Pathway Associations", Database EMBL 'Online, Accession No: Q847D1.	

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<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

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